

SUPERFUND RESPONSE ACTION PRIORITY PANEL REVIEW FORM

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Date Form Completed: February 11, 2013

General Site Information

Region:	2	City:	Sayreville	State:	NJ
CERCLIS EPA ID:	NJD980663678 NJD980663678		CERCLIS Site Name:	Horseshoe Road Complex Site Atlantic Resources Corporation Site	
NPL Status: (P/F/D)	Final(F)	Year Listed to NPL:	1995 and 2002		

Brief Site Description: *(Site Type, Current and Future Land Use, General Site Contaminant and Media Info, Site Area and Location information.)*

The Horseshoe Road Complex (HRC) site is a 12-acre property including two dump areas and the former Atlantic Development Corporation facility (ADC). The ADC facility consisted of three main buildings that were used by various entities to produce roofing materials, epoxy resins, plastic polymers and pigments, among other products. Poor storage and disposal, as well as several fires resulted in releases of hazardous substances, including volatile organic compounds and metals to the environment.

The adjacent Atlantic Resources Corporation (ARC) site is a 4.5-acre property also located on Horseshoe Road. It was the location of a precious metals recovery facility operated by several companies, including the Atlantic Resources Corporation. Although initially proposed on the NPL as part of the Horseshoe Road site, the ARC site was eventually listed separately. It is being addressed by PRPs.

The Remedial Investigations and subsequent Records of Decision (RODs) for the three operable units were undertaken jointly for these two sites, due to their proximity to one another, and the comingling of contaminants in groundwater and surface water.

General Project Information

Type of Action:	Remedial	Site Charging SSID:	2013 T 02D 303DD2 02T6RD03
Operable Unit:	3	CERCLIS Action RAT Code:	RA

Is this the final action for the site that will result in a site construction completion? ☒ Yes ☐ No

Will implementation of this action result in the Environmental Indicator for Human Exposure being brought under control? ☐ Yes ☒ No

Response Action Summary

Describe briefly site activities conducted in the past or currently underway:

Problems on Horseshoe Road first came to EPA's attention in 1981, when a brush fire at one of the dump areas on the HRC site exposed approximately 70 partially-filled drums containing acetonitrile, silver cyanide and ethyl acetate.

Since 1985, when the state requested that EPA take the lead role for the cleanup, EPA has performed 10 removal actions. These actions helped stabilize the threats by removing more than 3,000 drums, cleaning up dioxin and mercury spills, emptying and disposing of materials found in numerous tanks and vats, and excavating and disposing of contaminated soils and debris.

The Horseshoe Road site was proposed for inclusion on the NPL in 1993, and formally placed on the NPL on September 29, 1995. The adjacent ARC facility was initially included in the description of the Horseshoe Road site, but it was removed from the NPL listing after the potentially responsible parties (PRPs) for ARC challenged the joint listing.

In the summer of 1997, EPA initiated a remedial investigation and feasibility study (RI/FS) to jointly characterize the nature and extent of contamination at the two sites. An RI report was released in 1999. The RI evaluated groundwater, surface water, surface soils, subsurface soils, sediments and building material.

EPA is addressing these sites in separate phases, or operable units. In September 1999, a Focused Feasibility Study (FFS) was completed for Operable Unit 1 (OU1), the buildings and structures at the ADC and ARC facilities. A September 2000 ROD for OU1 called for demolition and off-site disposal of buildings and aboveground structures. On April 10, 2001, EPA completed the OU1 remedy for the Horseshoe Road site, removing the buildings and surface debris from the ADC facility.

Based on additional data gathered from the ARC site during the RI, together with previously obtained data, EPA proposed the ARC facility as a separate NPL site in September 2001. The site was formally placed on the NPL on September 5, 2002.

In May 2003, the OU1 remedy for the ARC site was completed. A PRP group for the ARC site, with EPA oversight, demolished and disposed of all on-site buildings and aboveground structures, and removed several underground storage tanks discovered during the cleanup.

In 2003, the PRPs for the ARC site agreed to perform a remedial investigation and feasibility study of an adjacent marsh and the Raritan River (designated Operable unit 3), assessing the impact of contamination from both sites. Due to the comingling of contamination from the HRC and ARC sites, EPA decided that separate investigations for the two sites would be impractical.

In September 2004, EPA signed a ROD addressing soil and groundwater identified as Operable Unit 2 (OU2). The ROD called for excavation and disposal of contaminated soil, including deep soils that acted as groundwater contaminant source material. In February 2008, EPA began work on the OU2 Remedy for the Horseshoe Road site, and completed it in September 2009.

In July 2007, EPA and a PRP Group for the ARC site entered onto a judicial consent decree to perform the OU2 remedial design for both the ARC site and HRDD portion of the Horseshoe Road site, and the remedial action for the ARC site.

In June 2009 EPA signed a ROD for OU3 and began work on the Remedial design which is the subject of this document.

In September of 2012, The PRPs entered into an amended consent decree in which they agreed to perform the OU2 remedial action for HRDD. In addition to the PRPs agreeing to perform the remedial action for the HRDD portion of the Horseshoe Road site, the amended consent decree also resolved past costs, and the PRP's liability to OU3, allowing the PRPs to cash out. The OU3 investigation had revealed that the majority of the OU3 contaminants originated from the Horseshoe Road site, such that OU3 would be funded primarily from Federal and State sources. The PRPs are expected to start their portion of the OU2 remedy in the spring of this year.

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Specifically identify the discrete activities and site areas to be considered by this panel evaluation:

The planned remedial actions to be considered by the panel consist of following:

- Excavation, transportation and disposal of approximately 33,000 cubic yards of contaminated sediments from the Horseshoe Road/ARC Marsh;
- Dredging of approximately 37,000 cubic yards of contaminated sediments from the Raritan River;
- Off-site disposal of the dredged material;
- Backfilling and grading of all excavated or dredged areas with clean cover material;
- Institutional controls for the marsh sediments, such as a deed notice or covenant, to prevent exposure to residual sediment contamination that may exceed levels that would allow for unrestricted use;
- Institutional controls for the river sediments, to prevent disruption of cover in the event that materials are left at depth; and
- On-site restoration of approximately six acres of wetlands disturbed during implementation of the remedy.

The associated cost and implementation timeframe for the selected remedial actions at the Horseshoe Road Complex site and Atlantic Resource Corporation site are as follows:

Estimated cost of Remedial Action: \$ 40,700,000

Estimated construction time: 24 months

Briefly describe additional work remaining at the site for construction completion after completion of discrete activities being ranked:

This would be the final remedial action for both sites. The PRP group is about to start the OU2 work at Atlantic Resources site, and the Horseshoe Road drum dump portion of the Horseshoe Road Complex site. That effort should be completed in 2014.

Response Action Cost

Total Cost of Proposed Response Action:

(\$ amount should represent total funding need for new RA funding from national allowance above and beyond those funds anticipated to be utilized through special accounts or State Superfund Contracts.)

\$33,900,000 \$40,700,000 – (\$4,070,000 10% State share + \$2,000,000 special account)

Source of Proposed Response Action Cost Amount:

(ROD, 30%, 60%, 90% RD, Contract Bid, USACE estimate, etc...)

30% Remedial Design

Breakout of Total Action Cost Planned Annual Need by Fiscal Year:

(If the estimated cost of the response action exceeds \$10 million, please provide multiple funding scenarios for fiscal year needs; general planned annual need scenario, maximum funding scenario, and minimum funding scenario.)

Exemption 5: DP

Demobilization cost – \$25,000

Remobilization cost – \$25,000

Down time cost (equipment rental, admin, and security, etc) – \$ 111,000/month

1.8% escalation cost

Readiness Criteria

1. Date State Superfund Contract or State Cooperative Agreement will be signed (Month)?

August 2013

2. If Non-Time Critical, is State cost sharing (provide details)?

The State Cooperative agreement provides 10% of the RA cost or \$3,700,000 in this case.

3. If Remedial Action, when will Remedial Design be 95% complete?

August 2013

4. When will Region be able to obligate money to the site?

September 2013

5. Estimate when on-site construction activities will begin:

Early 2014

6. Has CERCLIS been updated to consistently reflect project cost/readiness information?

Yes

Site/Project Name:	Horseshoe Road Complex Site/Atlantic Resources Corporation Site		
Criteria #1 - RISKS TO HUMAN POPULATION EXPOSED (Weight Factor = 5)			
Describe the exposure scenario(s) driving the risk and remedy. Include risk and exposure information on current/future use, on-site/off-site, media, exposure route, and receptors:			
<p>The HI for non-cancer effects due to potential exposure to arsenic in surface water and sediment is 2.1 for the youth resident trespasser exposed to marsh sediments and surface water and 1.1 for the youth resident trespasser exposed to Raritan River sediment and surface water. The non-cancer HI is 2.6 for future adult resident trespassers exposed to arsenic in marsh sediments and surface water and is 1.5 for future adult resident trespassers exposed to Raritan River sediment, surface water and shellfish. The non-cancer HI for future child resident trespasser due to exposure to marsh sediment and surface water and Raritan River sediment and surface water is 16 and 8, respectively. The non-carcinogenic hazards for these populations were attributable primarily to arsenic and all are above the acceptable EPA value of 1.</p> <p>Results of the Human Health Risk Assessment indicate that future adult resident trespassers (3.9×10^{-4} Marsh; 2.5×10^{-4} Raritan River) and future child resident trespassers (6.1×10^{-4} Marsh; 3.1×10^{-4} Raritan River) exceed the acceptable EPA risk range for carcinogens due to exposure to arsenic in surface water, sediment, and shellfish.</p>			
Estimate the number of people reasonably anticipated to be exposed in the absence of any future EPA action for each medium for the following time frames:			
<u>MEDIUM</u>	<u><2yrs</u>	<u><10yrs</u>	<u>>10yrs</u>
Surface water	50	500	Unknown
Sediment	50	500	Unknown
Shellfish	Unknown	Unknown	Unknown
Discuss the likelihood that the above exposures will occur:			
<p>Evidence from the marsh area indicates that trespassing in this area occurs frequently. Trespassing includes teen age drinking, dog walking and hunting.</p> <p>Commercial and recreational crabbing and fishing currently take place right off-shore of the site.</p>			
Other Risk/Exposure Information?			
<p>Waterfront development plans include a potential boardwalk along river front for recreation, which in the absence of a clean-up would increase exposure due to higher use. This waterfront development plan is several years away. If the OU3 remedy is not completed before the waterfront development is ready to begin, EPA will need to stop the borough's work, as it will interfere with the implementation of the remedy and increase exposure potential. The municipality is currently in the process of acquiring the land needed for this development, including the sites.</p>			

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Criteria #2 – SITE/CONTAMINANT STABILITY (Weight Factor = 5)	
Describe the means/likelihood that contamination could impact other areas/media given current containment:	
Contaminated sediments and surface water wash out of the marsh and into the Raritan River especially during high water events. Although some of the source material was removed from upland areas in the previous OU, there are still highly contaminated sediments in the marsh.	
Are the contaminants contained in engineered structure(s) that currently prevents migration of contaminants? Is this structure sound and likely to maintain its integrity?	
There are no engineered structures.	
Are the contaminants in a physical form that limits the potential to migrate from the site? Is this physical condition reversible or permanent?	
No	
Are there institutional physical controls that currently prevent exposure to contamination? How reliable is it estimated to be?	
Fences have been erected and signs posted. The fencing does not completely surround the area but does limit access, although it is frequently breached and circumnavigated. The signs have limited effect.	
Other information on site/contaminant stability?	
The OU3 area is within the 100 year flood zone and therefore subject to storm erosion.	

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Criteria #3 – CONTAMINANT CHARACTERISTICS (Weight Factor = 3)			
<i>(Concentration, toxicity, and volume or area contaminated above health based levels)</i>			
List Principle Contaminants (Please provide average and high concentrations.): <i>(Provide upper end concentration (e.g. 95% upper confidence level for the mean, as is used in a risk assessment, or maximum value [assuming it is not a true outlier], along with a measure of how values are distributed {e.g. standard deviation} or a central tendency values [e.g., average].)</i>			
Contaminant	Media	*Concentrations mg/kg	
		Mean	Maximum
Arsenic	Marsh Sediment	2,000 ^b	4030 ^a , 17,800 ^b
Mercury	Marsh Sediment	13.1 ^b	385 ^b
PCBs (total)	Marsh Sediment	4 ^b	32 ^b
Arsenic	River Sediment	97 ^b	2,200 ^a
Mercury	River Sediment	1.4 ^b	7 ^b
PCBs (total)	River Sediment	1.4 ^b	9.5 ^b
<p>Volumes of contaminated sediment - Marsh = 37,000 cy River = 33,000 cy</p> <p><i>(*Concentrations: Provide concentration measure used in the risk assessment and Record of Decision as the basis for the remedy.)</i></p> <p>^a Human Health Risk Assessment 1999 (See 2nd comment below)</p> <p>^b Baseline Ecological Risk Assessment 2006</p>			
Describe the characteristics of the contaminant with regards to its inherent toxicity and the significance of the concentrations and amount of the contaminant to site risk. <i>(Please include the clean up level of the contaminants discussed.)</i>			
PCBs and Mercury bioaccumulate in fatty tissues. This makes them toxic to both fish and people that eat them. The Raritan River Estuary is already impacted by these contaminants among others, and efforts to reduce the contaminant load in the river are taking place at the State and local level.			
Describe any additional information on contaminant concentrations which could provide a better context for the distribution, amount, and/or extent of site contamination. <i>(e.g. frequency of detection/outlier concentrations, exposure point concentrations, maximum or average concentration values, etc.....)</i>			
The Human Health Risk Assessment for OU3 was based on a very limited data set. The data set used for the Baseline Ecological Risk Assessment was much more robust, and indicated that the extent of the contamination was greater. Had we elected to reassess the human health component with the newer data, the human health risk would have been much higher.			
Other information on contaminant characteristics?			

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Criteria #4 – THREAT TO SIGNIFICANT ENVIRONMENT (Weight Factor = 3) <i>(Endangered species or their critical habitats, sensitive environmental areas.)</i>	
Describe any observed or predicted adverse impacts on ecological receptors including their ecological significance, the likelihood of impacts occurring, and the estimated size of impacted area:	
<p>Although up gradient sources are being addressed in OU1 and OU2 actions. Stormwater runoff during extremely wet periods or intense rainstorms can still erode contaminated sediments, containing arsenic, mercury, and PCBs, further into the marsh and Raritan River. The marsh and river act as habitat for many plants and animals as well as a food forage area for migratory species.</p> <p>The ecological risk assessment identified the potential for ecological risks from exposure to chemicals detected in site surface water and sediment. In each area assessed, the potential for ecological risks was determined to be present. Species potentially impacted by contaminated surface water and sediment include the Shorttail Shrew, Red-Tailed Hawk, Green Frog, Marsh Wren, Spotted Sandpiper, and Fiddler Crab.</p> <p>Potential ecological risks to the Shorttail Shrew and Red-Tailed Hawk from soil contaminants arise primarily from PCBs (Aroclor-1248 and Aroclor-1260) and inorganics (primarily from arsenic, chromium, lead, zinc, and cyanide).</p> <p>The site is considered a source of contamination to the Lower Raritan Estuary.</p>	
Would natural recovery occur if no action was taken? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No If yes, estimate how long this would take.	
The levels of arsenic, mercury and PCBs in surface sediments remains high, 27 years after site operations ceased. PCBs are extremely resistant to biodegradation and biotransformation. Although PCB degradation can occur, it typically proceeds at an extremely low rate. There is no evidence of natural recovery processes affecting arsenic or mercury concentrations in the surface sediments in any meaningful way.	
Other information on threat to significant environment?	
The Lower Raritan Estuary is considered an impaired water under section 303 (d) of the Clean Water Act based on metals contamination including mercury and arsenic.	

Site/Project Name:	Horseshoe Road Complex Site/Atlantic Resources Corporation Site
Criteria #5 – PROGRAMMATIC CONSIDERATIONS (Weight Factor = 4) <i>(Innovative technologies, state/community acceptance, environmental justice, redevelopment, construction completion, economic redevelopment.)</i>	
Describe the degree to which the community accepts the response action.	
<p>Sayreville is in the process of redeveloping their shorefront properties including the area where the site is located. The town has plans to acquire the land needed for the redevelopment, including both sites, and hopes to begin development within 2 years. They concur with our cleanup and hope we can move it along to make way for redevelopment. There plans include extending a boardwalk along the shore for recreational use (walking, biking and fishing). At this point any delay will directly impact their redevelopment schedule.</p>	
Describe the degree to which the State accepts the response action.	
<p>The State concurs with the remedy.</p>	
Describe other programmatic considerations, e.g.; natural resource damage claim pending, Brownfields site, use of innovative technology, construction completion, economic redevelopment, environmental justice, etc...	
<p>This action will allow for two construction completions.</p> <p>The borough of Sayreville has redevelopment plans for the area that encompasses both sites and the OU3 wetland areas. This work cannot proceed without completion of the OU3 Remedy.</p>	